## **Author Index**

**VOLUME 19, 2001** 

Abrams, Larry S., 373 Adashi, Eli Y., 3, 167 Alsip, Nancy L., 75

Barnhart, Kurt T., 295 Beever, C., 175 Bischof, P., 49 Blumenthal, Paul D., 313 Bodek, G., 19 Brown, Carolyn J., 123, 125, 175 Burke, Anne E., 313

Carr, Bruce R., 121, 203, 291 Cohen, Jean, 205, 269 Collins, John, 279 Cortes, Laura Salas, 133 Creasy, George W., 373 Creinin, Mitchell D., 305

Darney, Philip D., 339 Davis, Owen K., 207 Dayal, Molina, 295 Derecka, K., 19 de Ziegler, Dominique, 31 Dhont, Marc, 251 Diedrich, K., 213 Disteche, Christine M., 147

Ellertson, Charlotte, 323 Esplin, Michael S., 167

Fanchin, Renato, 31 Fazleabas, Asgerally T., 69 Felberbaum, R.E., 213 Fields, Michael J., 87 Fisher, Alan C., 373 Frydman, René, 31 Gardner, David K., 259 Gawronska, B., 19 Ghinea, Nicolae, 97 Grimes, David A., 293 Gurevich, Michael, 87

Harwood, Bryna, 381

Islami, D., 49

Jones, Jr., Howard W., 205, 269

Kaunitz, Andrew M., 293, 331 Kenneson, Aileen, 159 Koenig, Jacqueline, 323 Kurtzman, James T., 63

Lei, Z.M., 103 Leppig, Kathleen A., 147 Licht, P., 37 Lobo, Shalini C., 69 Ludwig, M., 213 Lukács, Hedvig, 111 Luukkainen, Tapani, 355, 365

McElreavey, Ken, 133 Meckstroth, Karen R., 339 Milgrom, Edwin, 97 Mishell, Jr., Daniel R., 381 Mizrachi, Dario, 87 Mock, P., 49

Oehninger, Sergio, 231

Pakarinen, Päivi, 355, 365 Peltier, Eric, 31 Peng, Xinjiang, 69 Porcu, Eleonora, 221 Pymar, Helen C., 305

Rao, C.V., 5, 7, 63, 75, 103 Raymond, Elizabeth G., 323 Robinson, W.P., 175 Rosenwaks, Zev, 207 Ross, Judith L., 141 Russu, V., 37

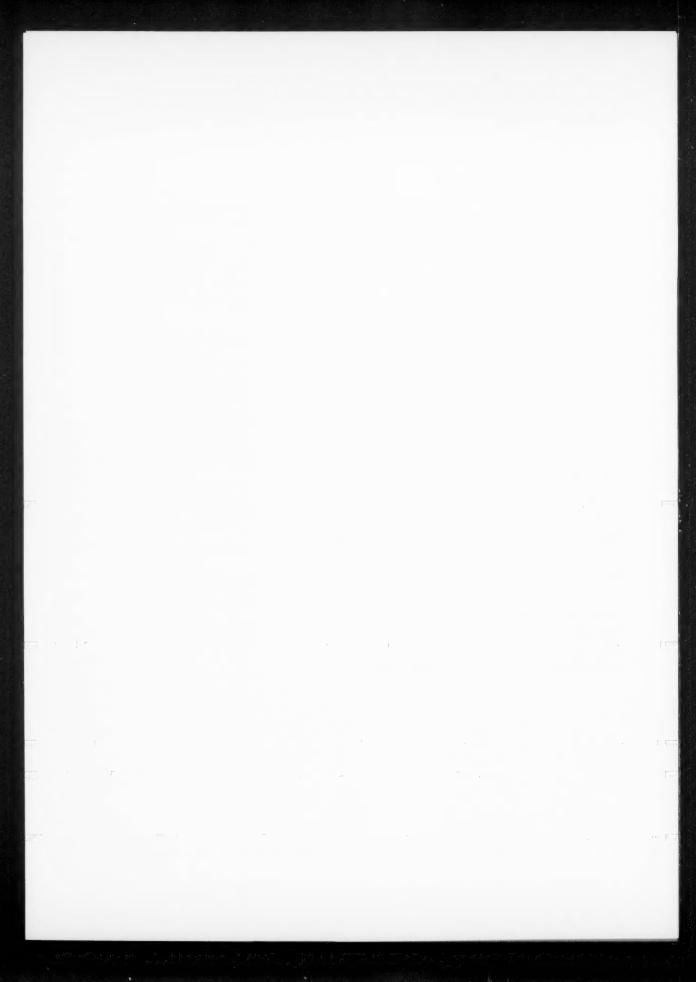
Samango-Sprouse, Carole, 193 Schoolcraft, William B., 259 Shemesh Mordechai, 87 Shochet, Tara, 323 Shore, Laurence S., 87 Simpson, Joe Leigh, 123, 239 Stephenson, M.D., 175 Stepien, A., 19 Stewart, Felicia, 323 Stram, Yehuda, 87 Srisuparp, Santha, 69

Tavares Adriano B., 167 Toivonen, Juhani, 355, 365 Toth, Peter, 55 Trussell, James, 323

Van den Veyver, Ignatia B., 183

Warren, Stephen T., 159 Wildt, L., 37, Wilson, H., 63

Ziecik, A.J., 19 Zinn, Andrew R., 141



## **Subject Index**

**VOLUME 19, 2001** 

Abortion

spontaneous, intracytoplasmic sperm injection (ICSI), genetic effects, 240–247

spontaneous recurrent, skewed X inactivation and, 175–180

threatened abortion, uterine blood vessels, LH/hCG receptors in, 55-60

Adenomyosis, levonorgestrel-releasing intrauterine system (LNG-IUS) for management of, 369–371

Adenylate cyclase, LH activation, bovine models, 89–94 Adherence, transdermal contraception and efficacy of, 373–379

Adolescent patients

implant contraception in, 344-349

oral contraceptive use and compliance rates, 313–320

Age, maternal, assisted reproductive technologies, multiple pregnancies, avoidance of, 271–277

Amino acids, embryo transfer, blastocyst vs. day 2 or 3 transfer, 259–266

Aneuploidy

polysomy X Klinefelter syndrome, 200–201 recurrent spontaneous abortion, X chromosome inactivation, 175–180

Angiogenesis, rat models, uterine blood vessels, LH/hCG effects on, 80–81

Animal models

baboon uterine receptivity, chorionic gonadotropin (CG) and, 72–73  $\,$ 

bovine myometrium and cervix, LH and FSH receptors,  $87\!-\!94$ 

pig and human studies, parallels in, gonadotropin regulation, nongonadal tissue, 19–27

rat models

behavioral effects of hCG, 111-118 LH/hCG effects on uterine blood flow, 75-81

Anxiety, rat models, behavioral effects of hCG and, 111-118

Assisted reproductive technologies (ART)

blastocyst vs. embryo transfer, 259-266

cost-effectiveness of in vitro fertilization, 279-287

intracytoplasmic sperm injection (ICSI), genetic effects, 239–247

male infertility strategies, 231-235

multiple pregnancies, avoidance of, 269-277

oocyte freezing, 221-228

research overview, 205

single-embryo transfer, 251-257

superovulation strategies, 207-211

in vitro fertilization, gonadotropin-releasing hormone antagonists and, 213–219

Azoospermia, strategies for management of, 231-235

Baboon studies, uterine receptivity, chorionic gonadotropin (CG) and, 69–73

Behavior

Klinefelter syndrome, neurodevelopmental abnormalities, 193–201

LH/hCG receptors, neural action of, 105-107

rat models, human chorionic gonadotropin (hCG) effect on, 111–118

Benign breast disease, oral contraceptives and reduction of, 296

Blastocyst transfer, embryo transfer, blastocyst vs. day 2 or 3 transfer, 259–266

Blood flow resistance

rat models, uterine blood vessels, LH/hCG effects on, 75–81

uterine blood vessels, LH/hCG receptors in, 55-60

BMP15 gene, premature ovarian failure, 144-145

Bone mineral density

implant contraception and, 345-346

injectable contraceptives and possible loss of, 332–335 oral contraceptives and preservation of, 298–301

Bovine models, myometrium and cervix, LH and FSH receptors, 87–94

Brain, LH/hCG neural actions in, 103-107

Breast cancer

levonorgestrel-releasing intrauterine system (LNG-IUS) combined with tamoxifen treatment, 370–371

LH/hCG receptor function and, 10-12

oral contraceptive use and risk of, 310-311

Broad ligament, LH/hCG receptors in, 22-24

Cancer. See also Breast cancer; Ovarian cancer; Uterine cancer injectable contraceptives and risk of, 332–335 LH/hCG receptor function and, 7–12

Carbohydrates, embryo transfer, blastocyst vs. day 2 or 3 transfer, 259–266

Cardiovascular disease

injectable contraceptives and risk of, 332–335 oral contraceptive use and risk of, 305–311

cDNA

microarray, ovarian genes, 169-172

representational difference analysis (RDA), ovarian genes, 169–172

Central nervous system (CNS), LH/hCG neural actions and, 103-107

Cervix

bovine models, FSH receptors, 87–94 contraceptive vaginal rings (CVRs), effects on, 387–388 implant contraception and mucus changes in, 342 LH/hCG receptors in, 26

Cetrorelix, in vitro fertilization, gonadotropin-releasing hormone (GnRH) antagonists, 213–219

Chorionic gonadotropin (CG), uterine receptivity in baboons and, 69-73

Chromosome. See X chromosome; Y chromosome

Chromosome damage

intracytoplasmic sperm injection (ICSI), genetic effects, 239–247

oocyte freezing technology, 226-228

Clomiphene challenge test (CCCT), superovulation strategies, assisted reproductive technologies (ART), 209–211

Clomiphene citrate (CC), superovulation strategies, assisted reproductive technologies (ART), 207–211

Cluster analysis, ovarian gene identification, 170–172 Cognition, polysomy X Klinefelter syndrome, 193–201 Colorectal cancer, oral contraceptives as protection from,

299

Compliance studies oral contraceptive use and compliance rates, 313–320 transdermal contraception, 373–379

Congenital bilateral absence vas deferens (CBAVD), intracytoplasmic sperm injection (ICSI), 244–247

Connexin (CX) proteins, human chorionic gonadotropin receptor function and, 65–66

Contraception. See Hormonal contraception; specific types of contraception

Contraceptive vaginal rings (CVRs), risks and benefits of, 381–388

Controlled ovarian hyperstimulation (COH)

in vitro fertilization, gonadotropin-releasing hormone (GnRH) antagonists, 213–219

in vivo endometrial morphology, human chorionic gonadotropin and, 31–35

Copper-T intrauterine device, emergency contraception using, 323–329

Corpus luteum (CL), human chorionic gonadotropin (hCG) invasion, trophoblast invasion compared with, 52

Cortical granules, oocyte freezing technology, 226–228

Cost-effectiveness analysis

emergency contraception, 328 implant contraception, 343–349 in vitro fertilization, 279–287

Cryopreservation

cost-effectiveness of in vitro fertilization and, 282–287 multiple pregnancies, avoidance of, in assisted reproductive technologies, 269–277

oocyte freezing, 221-228

Cryoprotectants, oocyte freezing technology and, 225–228 Culture protocols, embryo transfer, blastocyst vs. day 2 or 3 transfer, 261–266

Cumulus oophorus, oocyte freezing technology and, 225–228 Cyclooxygenase, LH activation, bovine models, 91–94

Cystic fibrosis transmembrane regulator (CFTR) gene, intracytoplasmic sperm injection (ICSI), genetic effects, 244–247 Cytokines

human chorionic gonadotropin (hCG) in embryoendometrial microenvironment, differentiation and implantation, 37–46

human chorionic gonadotropin receptor function and, 65-66

Cytoskeleton, oocyte freezing technology, 226–228 Cytotrophoblast (CTB), human chorionic gonadotropin (hCG) invasion, 49–52

Depo-Provera, injectable contraception using, 331–335 Depot medroxyprogesterone acetate (DMPA), injectable contraception using, 331–335

Developmental abnormalities, polysomy X Klinefelter syndrome, 193–201

DIAPH2 gene, ring X abnormality, 148-154

Differential display (DD), ovarian genes, identification strategies, 168–172

Differential hybridization, ovarian genes, identification strategies, 167–172

Differential methylation, skewed X-chromosome inactivation, X-linked disorders, 184–189

Differentiation, human chorionic gonadotropin (hCG) in embryo-endometrial microenvironment, 37-46

Dosage compensation, X chromosome inactivation, 125–129

Double-embryo transfer

assisted reproductive technologies, multiple pregnancies, avoidance of, 272–277

techniques for, 252-257

Downstream cost analysis, in vitro fertilization, costeffectiveness, 284–287

Economic analysis, in vitro fertilization, cost-effectiveness, 279–287

Ectopic pregnancy

implant contraception as protection against, 342–343 oral contraceptives and protection against, 298

EDHF activity, rat models, uterine blood vessels, LH/hCG effects on, 81

Eicosanoid, LH/hCG receptors, neural action of, 106-107 Embryo

implantation, in vivo endometrial morphology, human chorionic gonadotropin and, 31–35

reduction, in multiple pregnancies, 275–277 transfer

blastocyst vs. day 2 or 3 transfer, 259–266 cost-effectiveness of in vitro fertilization and, 282–287 multiple pregnancies, avoidance of, 269–277 single-embryo transfer, multiple pregnancies, 251–257

Emergency contraception

barriers to, 326-329

combined emergency contraceptive pills (ECPS), 323-329 guidelines for, 323-329

oral contraceptive use and compliance and, 313–320 Endocrine organs, luteinizing hormone (LH) receptors, 3

Endometrial receptivity
human chorionic gonadotropin (hCG) in embryoendometrial microenvironment, differentiation and
implantation, 37–46

in vivo endometrial morphology, human chorionic gonadotropin and, 31–35

Endometriosis

levonorgestrel-releasing intrauterine system (LNG-IUS) for management of, 369–371

oral contraceptives and protection against, 300

Endometrium

implant contraception and changes in, 342

LH/hCG receptors in, 24-25

progestin-releasing intrauterine systems and, 355-361

secretory products of, 51-52

in vivo morphology, human chorionic gonadotropin and, 31–35

Endothelial cells, LH/CG receptor transcytosis, barrier in target organs, 97–100

Estradiol cypionate, injectable contraception using, 331–335 Ethics, of implant contraception use, 349

Ethinyl estradiol, contraceptive vaginal rings (CVRs) using, 384–388

Etonogestrel, contraceptive vaginal rings (CVRs) using, 385–388

Evra, transdermal contraception using, 373-379

Exogenous estradiol, in vivo endometrial morphology, human chorionic gonadotropin and, 31–35

Extracellular signal-regulated protein kinase (ERK), baboon models, uterine receptivity, chorionic gonadotropin modulation, 71–73

Female patients, fragile X syndrome genetics in, 159–163 Fetal development, LH/hCG receptors, neural action of, 103–107

FMR1 gene, fragile X syndrome in females, 159–163 FMRP protein, FMR1, fragile X syndrome in females, 159–163

Follicle-stimulating hormone (FSH) receptors

bovine models, cervical FSH receptors, 87–94 fragile X syndrome in females, 161–163

superovulation strategies, assisted reproductive technologies (ART), 208–211

Follicular atresia, recurrent spontaneous abortion, X chromosome inactivation, 175–180

Follicular hypertrophy, implant contraception and, 346 Fragile X syndrome, female patients, 159–163 FSH. See Follicle-stimulating hormone (FSH) receptors

Ganirelix, in vitro fertilization, gonadotropin-releasing hormone (GnRH) antagonists, 213–219

Gene

BMP15, premature ovarian failure, 144–145
FMR1, fragile X syndrome in females, 159–163
ovarian genes, identification strategies, 167–172
PKRX and PKRY, X-Y chromosome translocation,
133–138

SHOX

ring X abnormality, X chromosome, inactivation and phenotype, 148–154

Turner syndrome and premature ovarian failure, molecular analysis, 141–145

SRY gene, X-Y chromosome translocation, 133–138 USP9X, premature ovarian failure and, 143–145

Gene expression

luteinizing hormone receptors, 20–23 ovarian genes, differential hybridization, other identification strategies, 167–172 X chromosome inactivation, 126–129 Genetics

spontaneous, intracytoplasmic sperm injection (ICSI), 239–247

variants, nonrandom X chromosome inactivation, 126–129 Genotype-phenotype relationships, X-Y chromosome

Glycoproteins

human chorionic gonadotropin (hCG), trophoblast invasion, 51–52

LH/CG receptors, transendothelial transport, 98–100 GnRH. See Gondaotropin-releasing hormone (GnRH) antagonists

Gonadal development, X-Y chromosome translocation, 133–138

Gonadotropin-releasing hormone (GnRH) antagonists, in vitro fertilization and, 213-219

Gonadotropins

embryo-endometrial microenvironment, differentiation and implantation, 37-46

neural actions of, 103-107

nongonadal tissue regulation, 5 research overview, 7–12

translocation, 137-138

superovulation strategies, assisted reproductive technologies (ART), 207–211

Gonadotropin two-cell theory, luteinizing hormone (LH) receptor, 3

G proteins

baboon models, uterine receptivity, chorionic gonadotropin modulation, 69–73

bovine models, myometrium and cervical LH and FSH receptors, 87–94

Gynecological disease, LH/hCG receptor function and, 7-12

hCG. See Human chorionic gonadotropin (hCG)

Hemizona assay (HZA), male infertility strategies, 232-235

Hermaphroditism, X-Y chromosome translocation, 133-138

Heterochromatin, X chromosome inactivation, 127-129

High-responder stimulation, superovulation strategies, assisted reproductive technologies (ART), 210-211

Hormonal contraception

contraceptive vaginal rings (CVRs), 381-388

emergency contraception, 323-329

implant contraception, 339-349

injectable contraception options, 331-335

noncontraceptive benefits and therapeutic uses, 295-301

progestin-releasing intrauterine systems

risks and benefits, 355-361

therapeutic applications, 365-371

research overview, 293-294

risk studies of oral contraceptives, 305-311

transdermal contraception, 373-379

Hormone replacement therapy (HRT), levonorgestrelreleasing intrauterine system (LNG-IUS) for, 365–371

Human chorionic gonadotropin (hCG). See also Chorionic gonadotropin (CG)

embryo-endometrial microenvironment, differentiation and implantation, 37-46

neural actions, 103-107

nongonadal tissue regulation, 5

research overview, 7-12

pig and human studies, parallels in, 19-27

Human chorionic gonadotropin (hCG) (cont.) rat models behavior effects of, 111–118

uterine blood vessels, LH/hCG effects on, 75-81

role of, in clinical obstetrics, 63–66

transcytosis, endothelial barrier in target organs, 97–100 trophoblast invasion and, 49–52

uterine blood vessels, 55-60

in vivo human endometrial morphology, 31-35

Human menopausal gonadotropin (hMG), superovulation strategies, assisted reproductive technologies (ART), 208–211

Human studies, nongonadal LH/hCG receptors, pig studies, parallels with, 19–27

Hybridization techniques, ovarian gene identification, 167–172

Hyperandrogenic disorders, oral contraceptives for management of, 300

Hypoestrogenic states, oral contraceptives and protection against, 300

ICSI. See Intracytoplasmic sperm injection (ICSI) Implanon, implant contraception using, 339–349 Implantation

embryo transfer, blastocyst vs. day 2 or 3 transfer, 259–266 human chorionic gonadotropin (hCG) in embryoendometrial microenvironment, 37–46

Implant contraception, risks and benefits of, 339-349

Imprinting, nonrandom X chromosome inactivation, 126-129

Incontinentia pigmenti (IP), skewed X-chromosome inactivation, X-linked disorders, 188–189

Infection, LH/hCG receptor function and, 7-12

Infertility. See also Assisted reproductive technologies (ART) assisted reproductive technologies (ART)

blastocyst vs. embryo transfer, 259–266

cost-effectiveness of in vitro fertilization, 279–287 intracytoplasmic sperm injection (ICSI), genetic effects, 239–247

male infertility strategies, 231-235

multiple pregnancies, avoidance of, 269-277

oocyte freezing, 221-228

research overview, 205

single-embryo transfer, 251-257

superovulation strategies, 207-211

in vitro fertilization, gonadotropin-releasing hormone antagonists and, 213–219

male infertility

intracytoplasmic sperm injection (ICSI), genetic effects, 239–247

strategies for, 231-235

in vitro fertilization

blastocyst vs. embryo transfer, 259-266

cost-effectiveness of, 279-287

gonadotropin-releasing hormone antagonists and, 213–219

intracytoplasmic sperm injection (ICSI), genetic effects, 239–247

male infertility strategies, 234-235

multiple pregnancies, avoidance of, 269-277

oocyte freezing as alternative to, 221-228

single-embryo transfer, multiple pregnancies, 251–257 superovulation strategies, 207–211

in vitro fertilization with embryo transfer (IVF-ET), in vivo endometrial morphology, human chorionic gonadotropin and, 31–35

Informed patient choice, oral contraceptive compliance and, 313–320

Injectable contraception, options in U.S. for, 331-335

Inositol phosphate, LH activation, bovine models, 89–94 Integrins, human chorionic gonadotropin (hCG), trophoblast

invasion, 49–52

Intracytoplasmic sperm injection (ICSI) cost-effectiveness of, 281–287

genetic effects, 239-247

male infertility management, 231-235

Intrauterine devices (IUDs)

contraceptive vaginal rings (CVRs) compared with, 382–388 emergency contraception using, 323–329

progestin-releasing intrauterine systems risks and benefits of, 355–361

therapeutic applications, 365–371

Intrauterine growth retardation (IUGR), LH/hCG receptors, uterine blood vessels, 55–60

Intrauterine injection (IUI), male infertility strategies, 234–235 Intrauterine microdialysis (IUMD), human chorionic

gonadotropin (hCG) in embryo-endometrial microenvironment, differentiation and implantation, 37–46

In vitro fertilization

blastocyst vs. embryo transfer, 259-266

cost-effectiveness of, 279-287

gonadotropin-releasing hormone antagonists and, 213–219 intracytoplasmic sperm injection (ICSI), genetic effects, 239–247

male infertility strategies, 234-235

multiple pregnancies, avoidance of, 269-277

oocyte freezing as alternative to, 221-228

single-embryo transfer, multiple pregnancies, 251–257 superovulation strategies, 207–211

In vitro fertilization with embryo transfer (IVF-ET), in vivo endometrial morphology, human chorionic gonadotropin and, 31–35

In vitro studies, baboon uterine receptivity, chorionic gonadotropin (CG) and, 71–73

In vivo studies

baboon uterine receptivity, chorionic gonadotropin (CG) and, 69-73

endometrial morphology, human chorionic gonadotropin and, 31-35

rat models, uterine blood vessels, LH/hCG effects on, 78–81

Iron-deficiency anemia

levonorgestrel-releasing intrauterine system (LNG-IUS) for management of, 365–371 oral contraceptives and protection against, 298

orar contraceptives and protection against

Klinefelter syndrome

intracytoplasmic sperm injection (ICSI), genetic effects, 245–247

neurodevelopment and, 193-201

Lactating women, implant contraception use in, 347–349 Lethal mutation, X chromosome molecular and clinical correlates, 123–124 Levonorgestrel

contraceptive vaginal rings (CVRs) using, 382–388 emergency contraception using, 323–329 implant contraception using, 340–349 progestin-releasing intrauterine systems, 355–361

transdermal contraception using, 373–379

Levonorgestrel-releasing intrauterine system (LNG IUS) risks and benefits of, 355–361 therapeutic applications, 365–371

Leydig cells, LH/CG receptors, transendothelial transport, 98–100

LH. See Luteinizing hormone (LH) receptor

Low-responder stimulation, superovulation strategies, assisted reproductive technologies (ART), 208–210

Luteal phase supplementation

embryo transfer, blastocyst vs. day 2 or 3 transfer, 259–266 in vitro fertilization, gonadotropin-releasing hormone (GnRH) antagonists, 218–219

Luteinizing hormone (LH) receptor

bovine models, myometrial and vascular receptors, 87–94 gondaotropin two-cell theory, 3

knockout model, 7-12

neural actions, 103-107

nongonadal tissue regulation, 5

research overview, 7–12 pig and human studies, parallels in, 19–27

rat models

behavioral effects of, 111–118 uterine blood vessels, LH/hCG effects on, 75–81

role of, in clinical obstetrics, 64–66

transcytosis, endothelial barrier in target organs, 97–100 uterine blood vessels, 55–60

in vivo endometrial morphology, human chorionic gonadotropin and, 31–35

Lutropin. See Luteinizing hormone (LH) receptors Lyon's hypothesis, X chromosome inactivation, 126–129

Magnesium sulfate

LH/hCG receptors, uterine blood vessels, 55–60 tocolytic therapy using, 63–66

Male infertility

intracytoplasmic sperm injection (ICSI), genetic effects, 239–247

strategies for, 231-235

Male lethal defects, skewed X-chromosome inactivation, Xlinked disorders, 188–189

Mammalian dosage compensation, X chromosome inactivation, 125–129

Mammary glands, LH/hCG receptors in, 10-12, 27

Maternal age, assisted reproductive technologies, multiple pregnancies, avoidance of, 271–277

Maternal behavior, rat models, behavioral effects of hCG and, 111-118

Medroxyprogesterone acetate (MPA), injectable contraception using, 331–335

Meiotic spindle, oocyte freezing technology, 226–228 Melittin, bovine models, prostaglandin production, uterine

vein, 91-94

Menstrual disorders levonorgestrel-releasing intrauterine system (LNG-IUS) for management of, 365–371 oral contraceptives for management of, 299–301 progestin-releasing intrauterine systems and, 355–361

Metalloproteinases, human chorionic gonadotropin (hCG), trophoblast invasion, 49–52

Microarray techniques, ovarian gene identification, 169–172 Mirena, progestin-releasing intrauterine system, 356–361

Miscarriage, recurrent spontaneous abortion, X chromosome inactivation, 175–180

Mitochondrial transmission, intracytoplasmic sperm injection (ICSI), genetic effects, 246–247

Mitogen-activated protein kinase (MAPK), baboon models, uterine receptivity, chorionic gonadotropin modulation, 71–73

MLS syndrome, skewed X-chromosome inactivation, Xlinked disorders, 188–189

Monosomy X, Turner syndrome and premature ovarian failure, molecular analysis, 141–145

Mosaicism

skewed X chromosome inactivation, recurrent spontaneous abortion and, 179–180

skewed X-chromosome inactivation, X-linked disorders, 187–189

XYY Klinefelter syndrome, neurodevelopmental abnormalities, 193–201

Multiple pregnancies

avoidance of, in assisted reproductive technologies (ART), 269–277

single-embryo transfer and, 251-257

in vitro fertilization, cost-effectiveness and, 279-287

Myocardial infarction, oral contraceptive use and risk of, 307–311

Myometrium

bovine models, myometrial and vascular LH receptors, 87–94

LH/hCG receptors in, 22-24

rat models, uterine blood vessels, LH/hCG effects on, 80--81

Neonatal outcomes, in vitro fertilization, gonadotropinreleasing hormone (GnRH) antagonists, 218–219 Nestorone, contracentive vacinal rings (CVRs) using

Nestorone, contraceptive vaginal rings (CVRs) using, 384–388

Neurodevelopment, polysomy X Klinefelter syndrome, 193–201

Neuroendocrine function, LH/hCG receptors in brain, 105–107

Noncontraceptive benefits

injectable contraceptives, 331–335 oral contraceptives, 295–301

Nongonadal actions

follicle-stimulating hormon (FSH) receptors in, 93–94 LH/hCG regulation, 5

baboon models, uterine receptivity, 69–73

bovine models, myometrial and vascular receptors, 87–94 embryo-endometrial microenvironment, differentiation and implantation, 37–46

neural actions, 103-107

pig and human studies, parallels in, 19–27 rat models, behavioral effects, 111–118 rat models, uterine blood flow, 75–81

research overview, 7-12

transcytosis across endothelial barriers, 97–100 trophoblast invasion, 49–52

Nongonadal actions, LH/hCG regulation (cont.) uterine blood vessels and, 55-60 in vivo endometrial morphology, 31-35

Nonrandom inactivation

ring X abnormality, X chromosome, inactivation and phenotype, 149-154

skewed X-chromosome inactivation, X-linked disorders, 186-189

X chromosomes, 126-129

Norelgestromin (NGMN), transdermal contraception using,

Norethindrone acetate, contraceptive vaginal rings (CVRs) using, 384-388

Norplant, implant contraception using, 339-349

"Off-label" practices, noncontraceptive benefits of oral contraceptives, 295-301

Oocyte freezing, techniques and applications, 221-228 Oral contraceptives

emergency contraception using, 323-329 maximization of access to, 314-320

noncontraceptive benefits and therapeutic uses, 295-301 patient compliance and failure rates, 313-320 risks of, 305-311

Ortho Evra, transdermal contraception using, 373-379 Outcomes models, in vitro fertilization, cost-effectiveness,

Ovarian blood flow, rat models, uterine blood vessels, LH/hCG effects on, 78-81

Ovarian cancer, oral contraceptives and prevention of, 296 Ovarian cysts

oral contraceptives and protection against, 298-301 progestin-releasing intrauterine systems and, 360-361

Ovarian development, X chromosome molecular and clinical correlates, 124

Ovarian dysfunction, fragile X syndrome in females, 159-163 Ovarian failure. See Premature ovarian failure (POF)

Ovarian genes, differential hybridization, other identification strategies, 167-172

Ovarian hyperstimulation syndrome (OHSS) superovulation strategies, assisted reproductive technologies (ART), 208-211

in vitro fertilization, gonadotropin-releasing hormone (GnRH) antagonists, 213-219

Ovarian stimulation, superovulation strategies, assisted reproductive technologies (ART), 207-211

Oviduct function, LH/hCG receptors and, 21-23

Paracrine tissue invasion, human chorionic gonadotropin (hCG) in embryo-endometrial microenvironment, differentiation and implantation, 43-46

Parthenogenetic activation, oocyte freezing technology, 227-228

Patient compliance, oral contraceptive use and, 313-320 Pelvic inflammatory disease (PID)

oral contraceptives and reduction of, 296-298 progestin-releasing intrauterine systems for management of, 355-361

Pharmacokinetics

emergency contraception, 325-329 implant contraception, 341-349 transdermal contraception, 373-379 Pig studies, nongonadal LH/hCG receptors, 19-27 PKRX and PKRY genes, X-Y chromosome translocation,

Placebo interval, oral contraceptive compliance and, 319-320 Placentation, human chorionic gonadotropin (hCG) in

> embryo-endometrial microenvironment, differentiation and implantation, 42-46

Polycystic ovary syndrome (PCOS), superovulation strategies, assisted reproductive technologies (ART), 210-211

Polysomy disorders, Klinefelter syndrome, neurodevelopmental abnormalities, 193-201

Postcoital contraception, emergency contraception techniques, 323-329

Practice guidelines, oral contraceptive use and compliance rates, 313-320

Precompacted embryo, embryo transfer, blastocyst vs. day 2 or 3 transfer, 261-266

Pregnancy

human chorionic gonadotropin (hCG) and in embryo-endometrial microenvironment, differentiation and implantation, 45-46 maintenance of, 63-66

LH/hCG receptors, 7-12

uterine blood vessels, 55-60

multiple pregnancies, single-embryo transfer and, 251-257

Pregnancy loss. See Abortion; Threatened abortion

Premature luteinization, in vitro fertilization, gonadotropinreleasing hormone (GnRH) antagonists, 213-219

Premature ovarian failure (POF)

fragile X syndrome in females, 159-163

Turner syndrome and premature ovarian failure, molecular analysis, 141-145

X chromosome molecular and clinical correlates, 124 Preterm labor, human chorionic gonadotropin (hCG) and

pregnancy stabilization, 63-66 Progestasert, progestin-releasing intrauterine system, 356-361

Progesterone

baboon uterine receptivity, chorionic gonadotropin (CG) and, 70-73

contraceptive vaginal rings (CVRs), 381-388

Progestin-only contraceptives

contraceptive vaginal rings (CVRs), 381-388 emergency contraception using, 325-329

implant contraception using, 339-349

oral contraceptive compliance and, 318-320

progestin-releasing intrauterine systems risks and benefits of, 355-361 therapeutic applications, 365-371

Prostaglandins

behavioral effects of hCG and, 111-118

bovine models, myometrium and cervical LH and FSH receptors, 87-94

human chorionic gonadotropin receptor function and, 64-66

Protein structure, luteinizing hormone receptors, 20-23 Pseudoautosomal region (PAR), X chromosome molecular and clinical correlates, 123-124

Rat models

behavioral effects of hCG, 111-118 LH/hCG effects on uterine blood flow, 75-81 Receptor function, nongonadal tissue regulation, 7-12

Recurrent spontaneous abortion, skewed X inactivation and, 175–180

Representational difference analysis (RDA), ovarian genes, 169–172

Reproductive counseling, oral contraceptive use and compliance rates, 313–320

Rett syndrome, skewed X-chromosome inactivation, Xlinked disorders, 188–189

Reverse transcriptase assays, skewed X-chromosome inactivation, X-linked disorders, 185–189

Rheumatoid arthritis, oral contraceptives as protection from, 299

Ring X chromosomes, abnormality, X chromosome, inactivation and phenotype, 147–154

Risk assessment

injectable contraceptives, 332–335 oral contraceptives, 305–311

Safety analysis

emergency contraception, 325–329 transdermal contraception, 378–379

Semen analysis, male infertility strategies, 232–235

Sex chromosomes, X chromosome molecular and clinical correlates, 123–124

Sex determination, X-Y chromosome translocation, 133–138 Sex steroid hormones, contraceptive vaginal rings (CVRs) and release of, 381–388

Sexually transmitted infections (STIs), implant contraception as protection against, 347–349

SHOX gene

ring X abnormality, X chromosome, inactivation and phenotype, 148–154

Turner syndrome and premature ovarian failure, molecular analysis, 142–145

Side effects

contraceptive vaginal rings (CVRs), 386–388 of implant contraception, 339–349 injectable contraceptives, 332–335

oral contraceptives

emergency contraception and, 325–329 patient compliance and, 313–320

progestin-releasing intrauterine systems, 356-361

Signaling pathways

baboon uterine receptivity, chorionic gonadotropin (CG) and, 71–73

LH/hCG receptors, neural action of, 106-107

Single-embryo transfer

assisted reproductive technologies, multiple pregnancies, avoidance of, 273-277

multiple pregnancies, 251-257

Single-gene identification, ovarian genes, 170

Skewed X-chromosome inactivation

recurrent spontaneous abortion and, 175–180 X-linked disorders, 183–189

Sleep patterns, behavioral effects of hCG and, 111-118

Smoking, risk assessment of oral contraceptive use and, 305–311

Spermatozoa quality and quantity, male infertility strategies and, 231-235

Sperm chromatin structure assay (SCSA), male infertility strategies, 232–235

Sperm function testing, male infertility strategies, 232–235 Spinal cord regeneration, LH/hCG receptors, neural action of, 106–107

SRY gene, X-Y chromosome translocation, 133–138 Stature genes, Turner syndrome and premature ovarian failure, molecular analysis, 141–145

Sterilization, levonorgestrel-releasing intrauterine system (LNG-IUS) as replacement for, 368–371

Stochastic processes

nonrandom X chromosome inactivation, 126–129 skewed X-chromosome inactivation, X-linked disorders, 186–189

Stress ulcers, rat models, behavioral effects of hCG and, 111–118

Stroke, risk of, oral contraceptive use and, 305-311

Stromal fibroblasts, baboon uterine receptivity, chorionic gonadotropin (CG) and, 72–73

Superovulation strategies, assisted reproductive technologies (ART), 207–211

Suppression subtractive hybridization (SSH), ovarian genes, identification strategies, 168–172

Syncytiotrophoblast (STB), human chorionic gonadotropin (hCG) invasion, 49–52

Tamoxifen, levonorgestrel-releasing intrauterine system (LNG-IUS) combined with, 370–371

Target organs, LH/CG receptors, transendothelial transport to, 97-100

Thrombosis

venous thromboembolic disease, oral contraceptive use and risk of, 308–311

Tocolytic therapy, human chorionic gonadotropin (hCG) and pregnancy stabilization, 63–66

Toxic shock syndrome (TSS), oral contraceptives as protection from, 299

Trancytosis, LH/CG receptors, endothelial barrier in target organs, 97–100

Transcytotic receptors, LH/CG receptors as, 97–100

Transdermal contraception, techniques and pharmacokinetics of, 373–379

Transendothelial transport, LH/CG receptors, 98–100 Translocation

X/autosomes, 153-154

skewed inactivation, recurrent spontaneous abortion and, 177–180

X-Y chromosomes, 133-138

Trinucleotide repeat, fragile X syndrome in females, 159–163 Trisomy mosaicism, skewed X chromosome inactivation, recurrent spontaneous abortion and, 179–180

Trophoblast

differentiation, human chorionic gonadotropin (hCG) in embryo-endometrial microenvironment, 37–46 invasion, human chorionic gonadotropin (hCG), 49–52 Turner syndrome

ring X abnormality, X chromosome, inactivation and phenotype, 147–154

Xp gene, molecular analysis, 141-145

Twinning

assisted reproductive technologies, multiple pregnancies, avoidance of, 276–277

fragile X syndrome in females, 159–163 single-embryo transfer and, 251–257

Twinning (cont.)

skewed X-chromosome inactivation, X-linked disorders, 187-189

Umbilical cord, LH/hCG receptors in, 26-27

USP9X gene, premature ovarian failure and, 143-145

Uterine cancer, oral contraceptives as protection from, 299

Uterine environment, embryo transfer, blastocyst vs. day 2 or 3 transfer, 260-266

Uterine receptivity

baboon uterine receptivity, chorionic gonadotropin (CG) and, 69-73

human chorionic gonadotropin (hCG) and pregnancy stabilization, 63-66

Uterus

bovine models, LH stimulation of uterine vein, 91-94 LH/hCG receptors in, 22-26 rat models, LH/hCG effects on uterine blood flow, 75-81

vascular LH/hCG receptors in, 55-60

Vaginal rings, contraception using, 381-388 Vascular endothelium, rat models, uterine blood vessels, LH/hCG effects on, 81

Vascular tissue, prostaglandin production, LH activation, bovine models, 91-94

Venous thromboembolic disease, oral contraceptive use and risk of, 308-311

Vitrification, oocyte freezing technology and, 226-228

X chromosome

autosome translocations, 153-154 deletion, duplication and inversions, 153-154 fragile X syndrome in female patients, 159-162 molecular and clinical correlates, 123-124 ovarian gene identification, techniques for, 167-172 Xp genes, molecular analysis, 141-145 X-Y translocations, sex determination, 133-138 X chromosome inactivation (XCI)

193-201 mammalian dosage compensation, 125-129 ring X abnormalities, 147-154

incomplete inactivation, polysomy X Klinefelter syndrome,

skewed inactivation

recurrent spontaneous abortion and, 175-180 X-linked disorders, 183-189

XIST (Xi-specific transcripts) RNA

ring X abnormality, X inactivation and phenotype, 148-154

skewed X-chromosome inactivation, X-linked disorders, 183-189

X chromosome inactivation, 127-129

X-linked disorders, skewed X-chromosome inactivation, 183-189

45,X male phenotype

ring X abnormality, X chromosome, inactivation and phenotype, 147-154

X-Y chromosome translocation, 135-138

Xp chromosome arm

Turner syndrome and premature ovarian failure, molecular analysis, 141-145

X chromosome molecular and clinical correlates,

Xq chromosome arm, X chromosome molecular and clinical correlates, 123-124

XXY mutation, polysomy X Klinefelter syndrome, 193-201

Y chromosome

damage from intracytoplasmic sperm injection (ICSI), 244-247

X chromosome molecular and clinical correlates, 123-124 X-Y translocations, sex determination, 133-138

Yp chromosome arm, X-Y chromosome translocation, 133-138

(Y+) XX maleness, X-Y chromosome translocation, 135-138

Zona pellucida, oocyte freezing technology, 227-228

